

REMARKS

Claims 1-12 are pending and claims 1-12 were rejected by the Examiner. No claim has been amended.

The Examiner objected to the amendment submitted May 14, 2003 under 35 U.S.C. 132 because it allegedly introduced new matter. Applicants respectfully traverse. The specification, at page 17, has been amended to remove reference to the tradename cobal. Applicants note that the actual tradename for the recited Fe-Ni-Co alloy example recited in the specification (page 16, lines 9-11) is KOVAR. Moreover, similar consistent amendments have been made in the specification at pages 43, 44 and 47 to recite the alloy. Applicants submit that the present Amendment does not generate any new matter issue. Accordingly entry of the present Amendment is respectfully requested.

The Examiner objected to Applicants use of the terms cobal at page 43. Applicants have amended the specification to remove reference to the term cobal. As noted above, the actual tradename for the Fe-Ni-Co alloy example recited in the specification (page 16, lines 9-11) is KOVAR. Applicants respectfully submits that the imposed objection to the specification has been overcome and, hence, solicit withdrawal thereof.

Claims 1, 5, 6, and 9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Tower et al. (U.S. Pat. No. 6,020,628, hereinafter "Tower") in view of Roy et al. (U.S. Pat. No. 3,974,249, hereinafter "Roy") and Grossinger et al. (U.S. Pat. No. 5,712,622, hereinafter "Grossinger"). Applicants respectfully traverse the rejection for the reasons set forth *infra*.

Claims 3-4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Tower in view of Roy and Grossinger, and further in view of Carnall, Jr. et al. (U.S. Pat. No. 3,131,238, hereinafter "Carnall"). Applicants respectfully traverse the rejection for the reasons set forth *infra*.

Claims 2 and 10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Tower in view of Roy and Grossinger, and further in view of Scherber et al. (U.S. Pat. No. 4,708,419, hereinafter "Scherber"). Applicants respectfully traverse the rejection for the reasons set forth *infra*.

Claim 11 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Tower in view of Roy and Grossinger and Scherber, and further in view of Silvestrini et al. (U.S. Pat. No. 4,323,619, hereinafter "Silvestrini"). Applicants respectfully traverse the rejection for the reasons set forth *infra*.

Claims 1, 7 and 8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Castleman (U.S. Pat. No. 6,153,881) in view of Grossinger. Applicants respectfully traverse the rejection for the reasons set forth *infra*.

Claim 12 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Castleman in view of Grossinger and further in view of Adachi et al. (U.S. Pat. No. 4,302,674, hereinafter "Adachi"). Applicants respectfully traverse the rejection for the reasons set forth *infra*.

Independent claim 1 describes a ceramic infrared sensor, having a lens body, comprising ceramic, a supporting part, which supports the lens body, and a detection part, which detects the light that has been transmitted through the lens body. A pigment that shields visible light is contained in the lens body.

Independent claim 2 describes a ceramic infrared sensor, having a lens body, which is comprised of a ceramic part and a resin layer that covers at least the light receiving surface of the ceramic part, a supporting part, which supports the lens body, and a detection part, which detects the light that has been transmitted through the lens body. A pigment that shields visible light is contained in the ceramic part and/or resin layer of the lens body.

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge readily available to one of ordinary skill in the art. *In re Kotzab*, 217 F.3d 1365, 1370 55 USPQ2d 1313, 1317 (Fed. Cir. 2000); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992); *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). The determination of obviousness cannot be based on the hindsight combination of components selectively culled from the prior art to fit the parameters of the patented invention. *ATD Corp. v. Lydall, Inc.*, 159 F.3d 534, 546, 48 USPQ2d 1321, 1329 (Fed. Cir. 1998). There must be a teaching or suggestion within the prior art, within the nature of the problem to be solved, or within the general knowledge of a person of ordinary skill in the field of the invention, to look to particular sources, to select particular elements, and to combine them as combined by the inventor. *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 665, 57 USPQ2d 1161, 1167 (Fed. Cir. 2000); *ATD Corp.*, 159 F.3d at 546, 48 USPQ2d at 1329; *Heidelberger Druckmaschinen AG v. Hantscho Commercial Prods., Inc.*, 21 F.3d 1068, 1072, 30 USPQ2d 1377, 1379 (Fed. Cir. 1994) ("When the patented invention is made by combining known components to achieve a new system, the prior art must provide a suggestion or motivation to make such a combination.").

The Examiner rejected claim 1 over the combined teachings of Tower, Roy and Grossinger. The Examiner stated that Tower discloses a ceramic infrared sensor of the present claim, but acknowledged that Tower does not teach a pigment contained in the lens body that shields visible light. The Examiner relied on the newly cited reference to Roy, to demonstrate that a lens body containing MgAl_2O_4 (a lens material taught by Tower) has a 50% or more linear light transmittance at 3 to 5 μm wavelength. The Examiner relied on Grossinger to remedy Tower's deficiency of including a pigment contained in the lens body that shield visible light. The Examiner stated that Grossinger allegedly teaches that it is known in the art to provide a lens with pigment particles to absorb and diffuse visible light. The Examiner concluded that it would have been obvious to one having ordinary skill in the art to provide the ceramic lens of Tower with the pigment of Grossinger. Applicants respectfully traverse.

As acknowledged by the Examiner, Tower does not teach a ceramic infrared sensor comprising, in pertinent part, a pigment contained in a ceramic lens. Applicants note that Tower does not disclose a ceramic infrared sensor, but rather, generally discloses an optically transparent ceramic lens that is press-fit into an aperture formed in a metallic housing and a metallic coating layer then deposited on the aperture walls. See col. 1, lines 10-15. Thus, Tower's invention relates to a process of forming a hermetic ceramic to metal seal. See col. 1, lines 54-60. Further, Tower's disclosure is silent as to any use of a pigment in the lens body and, instead, the optically transparent member 12 is coated with a thin anti-reflective coating 36 to prevent extraneous optical signals from sending spurious messages to the optically active portion 32. See col. 3, lines 8-14.

Moreover, Applicants submit that Grossinger's disclosure is not enabled for using pigmented particles in a ceramic lens body, as claimed. It is noted that the section relied on by the Examiner, col. 2, lines 1-20 of Grossinger, is the Background of the Invention, and furthermore, Grossinger explicitly discloses that the prior art's pigmentation of the lens has numerous drawbacks. Firstly, Grossinger states that the pigmented lens of the prior art, also absorbs and diffuses visible radiation originating from within the detector, particularly light originating from indicator LEDs mounted within the detector, making such indicator LEDs practically invisible through the window or lens. Secondly, existing pigmented lenses are not suitable for outdoor use since they tend to become brittle and less transmissive to infrared light after being exposed to direct sunlight, and/or other outdoor weather conditions, for a long period of time. See col. 2, lines 10-20.

In view of the disadvantages of the prior art's use of pigment in a lens, Grossinger uses a diffractive optical element consisting of a diffraction grating formed on the surface of the lens which receives incident radiation. See col. 2, lines 40-53. Grossinger teaches that substantial shielding is performed by the grating 30, and optionally uses pigmentation in the detector 10 (col. 4, lines 40-55), but does not disclose the use of pigments included in the lens body, much less a ceramic lens body, as claimed. Further, the reduced amounts of pigments, as suggested in Grossinger at col. 4, lines 40-55, in the detector to potentially avoid the drawbacks of pigments, is immaterial to pigment used in a lens body.

Applicants further submit that the Examiner has failed to proffer any factual basis, to support the position that "a lens comprising both an anti-reflective coating and a pigment would transmit only the desired wavelength while minimizing reflections of desired wavelengths from the lens surface." As stated above, Tower's disclosure is silent as to any

use of a pigment in the lens body and, instead, the optically transparent member 12 is coated with a thin anti-reflective coating 36 to prevent extraneous optical signals from sending spurious messages to the optically active portion 32. See col. 3, lines 8-14. The Examiner has not provided any factual basis that would lead one having ordinary skill in the art to believe that modifying the device of Tower, which already comprises an anti-reflective coating, to further include the pigment of Grossinger, would somehow "transmit only the desired wavelength while minimizing reflections of desired wavelengths from the lens surface". The factual question of motivation cannot be resolved on subjective belief of the Examiner and unknown authority, but must be based on objective evidence of record. *In re Lee*, 277 F.3d 1338 (Fed. Cir. 2002). As such, the Examiner's failure to provide factual support for a teaching, suggestion, or motivation to modify Tower constitutes legal error. Thus, neither Tower nor Grossinger teaches the inclusion of a pigment in the lens body, comprising ceramic, to shield visible light and, therefore, the rejection is not legally viable and should be withdrawn.

Moreover, the secondary reference (Carnall) does not remedy the above deficiencies of Tower, Roy and Grossinger. Accordingly, the rejections recited in enumerated paragraphs 7 and 8, are not legally viable and, hence, Applicants solicit withdrawal thereof.

The Examiner rejected claim 1 over the combination of Castleman and Grossinger. The Examiner acknowledged that Castleman does not teach a ceramic infrared sensor comprising, in pertinent part, a pigment contained in the lens body, as claimed. The Examiner relied on Grossinger in an attempt to remedy this deficiency. The Examiner concluded that it would have been obvious to one having ordinary skill in the art to provide

the ceramic lens of Castleman with the pigment of Grossinger to counteract visible light heating. Applicants respectfully traverse.

As acknowledged by the Examiner, Castleman is silent as to a pigment contained in the lens body. Further, Grossinger disclosure is not enabled for using pigment in a ceramic lens body, as claimed. It is again noted that the section relied on by the Examiner, col. 2, lines 1-20 of Grossinger, is the Background of the Invention, and furthermore, Grossinger explicitly discloses that the prior art's pigmentation of the lens has numerous drawbacks, as indicated *supra*.

In view of the disadvantages associated with the prior art's use of pigment in the lens, Grossinger instead uses a diffractive optical element consisting of a diffraction grating formed on the surface of the lens which receives incident radiation. See col. 2, lines 40-53. Grossinger teaches that substantial shielding is performed by the grating 30, and optionally uses pigmentation in the detector 10 (col. 4, lines 40-55), but does not disclose the use of pigments included in the lens body, much less a ceramic lens body, as claimed. Further, the reduced amounts of pigments, as suggested in Grossinger at col. 4, lines 40-55, in the detector to potentially avoid the drawbacks of pigment, is immaterial to pigment used in a lens body. Therefore, there is no teaching or suggestion in either reference to support the Examiner's determination of obviousness. Absent this teaching or suggestion, the rejection is not legally viable. Further, the secondary reference (Adachi) does not remedy the deficiencies of Castleman and Grossinger. Accordingly, Applicants respectfully solicit the withdrawal of the rejections recited in enumerated paragraphs 11 and 12.

Independent claim 2 was rejected by the Examiner over the combination of Tower, Roy, Grossinger and Scherber. The Examiner relied on the combination of Tower, Roy and

Grossinger, as stated above, and relied on the additional teachings of Scherber for a polyethylene layer (resin layer) covering the ceramic portion of the lens body. The Examiner stated that it would have been obvious to one having ordinary skill in the art to provide a polyethylene layer overlying the lens body of Tower in order to protect the lens, as taught by Scherber. Applicants respectfully traverse.

Applicants rely on the arguments above with respect to the combination of Tower, Roy and Grossinger. Further, Scherber provides no suggestion or teaching to include a pigment in the lens body and, therefore does not remedy the deficiencies of Tower and Grossinger. Last, the remaining secondary reference (Silvestrini) fails to provide any suggestion or teaching with respect to a pigment included in the lens body to shield visible light. Thus, the rejections in enumerated paragraphs 9 and 10 are not legally viable and Applicants respectfully solicit withdrawal thereof.

It is believed that all pending claims are now in condition for allowance. Applicants therefore respectfully request an early and favorable reconsideration and allowance of this application. If there are any outstanding issues which might be resolved by an interview or an Examiner's amendment, the Examiner is invited to call Applicants' representative at the telephone number shown below.

09/817,155

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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